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NEW PROGRAM FOR IMPROVING EFFICIENCY  
OF USSR COAL MINING STARTS IN 1952

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By the end of 1951, more than 20 percent of all the coal removed from faces in slightly dipping and dipping seams was loaded by machine. Coal and rock loading in horizontal development work was mechanized at almost 1,600 working fronts, and about one third of the entire volume of operations in cutting tunnels was completed with the aid of loading machines. At 72 percent of all loading points, shunting operations were mechanized. Nearly 90 percent of all coal extracted in the mines was transported with the aid of electric locomotives. In more than 300 sloping passages with a total extent of nearly 150 kilometers and along 290 kilometers of horizontal passages, workers were transported in special mine cars. More than 1,250 kilometers of passageways are equipped with continuous electric lighting. New types of props have been introduced at 730 working faces, and in 1,250 kilometers of development passages. At 16 mines, control of underground transport is modeled after railroad transport, with the aid of signaling, centralization, and blocking installations.

By the end of 1951, 850 Donbass mines were working on the cycle schedule, and more than half of these fulfilled the established cycle norm. Labor productivity for faces converted to the cycle work schedule was, on an average, 20 percent higher than the average level for the basin, and, in the case of faces which were fulfilling the cycle norm, it was 35 percent higher.

Faces converted to the cycle work schedule advanced 40 meters a month as against an average of 30 meters for the entire Donbass. The productivity of the Donbass combine in the Donbass was 20 percent higher in the fourth quarter of 1951 than in the second quarter of 1950 (period before the conversion of faces to the cycle schedule). As a result of the increased coal output and the rise in labor productivity, the production costs of one ton of coal in the Donbass were reduced 7 rubles in 1½ years.

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In the second half of 1951, faces of coal mines in the Moscow, Karaganda, and Kuznetsk basins, and of coal mines in the Urals, Central Asia, East Siberia, the Far East, and Georgia, as well as shale mines, began to convert to work schedule on the basis of the experience of Donbass mines.

At the end of 1951, the Ministry of the Coal Industry adopted a number of important decisions intended to eliminate defects in the coal industry. A big program was planned to improve the mining economy and to convert to the most effective way of working coal deposits. This program, to be carried out in 1952 - 1955, embraces the following points:

1. Conversion to retreat mining in working mine fields and sections, and to the pillar system, improvement of the organization of coal mining at the working faces, bettering the conditions of underground transport operations, as well as the condition of passages and of the ventilation system.
2. Elimination of the wide dispersion of mining operations by intensifying the exploitation of the face, the section, the seam, and the horizon.
3. Simplification of methods of underground transport and introduction of improved and more productive methods of transporting coal along underground passages.
4. Completion of the conversion of working faces and development work to the cycle work schedule.

To carry out this program, further mechanization of work in the mines is necessary, particularly mechanization of development work. The volume of development work must be greatly increased and the speed in cutting development workings sharply stepped up to make it possible to convert to retreat mining in working mine fields and to the pillar system.

Soviet designers have already created models of combines for cutting horizontal passages along coal. The PK-2M combines is working successfully in the Moscow basin and cuts passages along coal at the rate of 300 meters per month. A combine for development work designed by the engineers Mogil-evskiy and Losev is being tested in the Kurbass, and the PKL-3 combine is being manufactured. However all these combines operate successfully only when cutting along coal. The creation of a development work combine capable of cutting passages in rock which is medium hard and hard presents considerable difficulty. Work in this field is being carried out in 1952 by the State Planning and Experimental Institute for Coal-Mining-Machinery Building, and coal-mining-machinery building plants will also work on this same problem.

In 1952, coal mines will receive an increased number of EPM-1 rock-loading machines which proved their value in 1950 - 1951, PPM-2 machines which are an improved model of the widely used UMF-1 machine, PML-5 pneumatic rock-loading machines, manipulators mounted on rock-loading machines and accelerating the process of drilling boreholes in the working face, and new, highly efficient ventilators to ventilate the working front in development work.

In 1952, the volume of mechanized loading at the mine face should increase more than 25 percent above what it was in 1951. This will be largely accomplished by the use of combines: the Donbass combine, use of which is limited by certain mining and geological conditions, the UKT and the Gornyak combines, created in 1950 - 1951 for use in thin seams, and the KKP-1 combine for use in steeply dipping seams. In addition to these, a new combine must be designed for seams of medium thickness, that is, more than 1.6-1.8 meters.

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The problem of mechanizing mine propping is complicated, and its solution is made more difficult by the fact that scientific research organizations have not, up to now, studied mine pressure sufficiently and have not worked out theoretical prerequisites for the creation of new types of mechanized propping. This situation should be remedied as soon as possible.

In view of the importance of underground transport in the improvement of the technical and economic indexes of mining operations, a basic reconstruction of underground transport should be carried out. It has been planned to ease the entire conveyer system of intermediate transport lines on existing designs of highly productive belt and scraper conveyers and to restrict electric locomotive haulage to main haulage passages where modern, heavy, electric locomotives can work at full capacity. The Soviet machine-building industry can supply the coal mines' requirements for electric locomotives completely, but in the past, these locomotives have not been efficiently exploited, being idle frequently, and often failing to work with a full load.

Much needs to be done to improve the efficiency of mine-surface installations. One important phase of this work concerns the creation of centralized coal-cleaning plants with fully automatic operations and serving a group of mines. Present automatic control methods in coal-cleaning plants are a chain of links technically connected with each other, but imperfect in themselves, and requiring a large number of personnel to supervise operations. For this reason, notwithstanding full mechanization of the cleaning process, 300-400 persons are at present employed in each coal-cleaning plant. With centralized plants and more efficient methods of automatic control, only 10-15 persons will be required.

Another factor in the improvement of mine-surface conditions concerns the elimination of huge piles of waste rock removed from the mine. Aside from the fact that the delivery of waste rock to the heap requires the unproductive use of labor, waste-rock heaps bring about contamination of the mine, pollute the air, and change the microclimate of the area. It is very important to solve the problem of getting rid of waste-rock heaps, particularly for new mines.

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